

California Pest Rating Proposal

***Anoplolepis gracilipes* (Fr. Smith): Long-legged ant**

Hymenoptera: Formicidae

Current Rating: Q

Proposed Rating: A

Comment Period: 01/30/2023 – 03/16/2023

Initiating Event:

Anoplolepis gracilipes is frequently intercepted on mail shipments. This ant has been introduced widely and is reported to have environmental impacts. It is not known to be present in California. A pest rating proposal is needed.

History & Status:

Background: Adult *Anoplolepis gracilipes* measure up to 4 mm in length, are slender with long legs, and are yellow-brown. They move rapidly (Wetterer, 2005). They nest in trees and in the ground and feed on a variety of sugar-rich (including honeydew from insects and fruit juices) and protein-rich (including dead and dying insects) foods (Chong and Lee, 2009; Haines and Haines, 1978). Activity is reported to be great at higher humidities (Chong and Lee, 2009). This ant forms supercolonies. Aggression among ants from different nests was not observed and food resources are shared between nests (Haines and Haines, 1978; Hoffman, 2022). The workers do not have a sting, but they do spray formic acid to subdue prey and presumably also for defense (MacGown).

Anoplolepis gracilipes has been introduced to many (primarily tropical) parts of the world. Impacts (primarily to the environment) have been widely reported. On Bird Island, Seychelles, *A. gracilipes* appeared to reduce the abundance of a native ant (Gerlach, 2004). Mezger and Pfeiffer (2011) also

found evidence that ant diversity in a national park in Malaysia declined after it was invaded. On an island in Japan, young land birds of two species were swarmed by this ant, resulting in corneal inflammation. These birds later died. Authors raised the possibility of large-scale impacts to the bird community (Matsui et al., 2009). It has been proposed that impacts from this and other invasive species may be greater on islands, which tend to be less diverse and may be more vulnerable (Csurhes and Hankamer, 2016).

Because this ant tends plant-feeding Hemiptera, it is considered a threat to agriculture because it could protect pest species from natural enemies (Csurhes and Hankamer, 2016). On the other hand, this ant is also reported to be a biological control agent against the cocoa weevil (*Pantorhytes* spp.) (Tsatsia and Jackson, 2019).

Worldwide Distribution: The native range *A. gracilipes* is uncertain but it is thought to originate in the Old World tropics (Wetterer, 2005). It is reported from: **Africa:** Mauritius, Réunion, Seychelles, South Africa, Tanzania; **Asia:** Brunei, Cambodia, China, Cocos Islands, Hong Kong, India, Indonesia, Japan, Malaysia, Myanmar, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam; **Central America:** Panama; **Europe:** Germany; **North America:** Mexico; **Oceania:** Widespread (“virtually every tropical island group”), including American Samoa, Australia, Fiji, Guam, Hawaii) (CABI Compendium; MacGown; Vásquez-Bolaños and Wetterer, 2021; Wetterer, 2005).

Official Control: *Anoplolepis gracilipes* is on the controlled pest list for South Korea (List of quarantine pests in Republic of Korea).

California Distribution: *Anoplolepis gracilipes* is not known to be in California.

California Interceptions: *Anoplolepis gracilipes* is intercepted frequently on mail shipments, including cut flowers. It was also found in a package facility (CDFA) (California Department of Food and Agriculture).

The risk *Anoplolepis gracilipes* poses to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** Although *A. gracilipes* primarily occurs in lowland tropical areas, its presence in Baja California Sur indicates it can live in an arid climate, though this may depend on irrigation, and there are some higher-elevation records in tropical areas (Vásquez-Bolaños and Wetterer, 2021; Wetterer, 2005). The work of Jung et al. (2017) suggests portions of California have a climate suitable for it. This ant feeds on a wide variety of foods, and food is likely not the critical factor in its potential distribution in California. This ant may be able to establish in milder portions of the state where there is sufficient artificial moisture in residential and agricultural areas. Therefore, *A. gracilipes* receives a **Medium (2)** in this category.
 - Low (1) Not likely to establish in California; or likely to establish in very limited areas.
 - **Medium (2) may be able to establish in a larger but limited part of California.**
 - High (3) likely to establish a widespread distribution in California.
- 2) **Known Pest Host Range:** *Anoplolepis gracilipes* is a generalist and feeds on a wide variety of plant and animal materials. Therefore, it receives a **High (3)** in this category.
 - Low (1) has a very limited host range.
 - Medium (2) has a moderate host range.
 - **High (3) has a wide host range.**
- 3) **Pest Reproductive and Dispersal Potential:** *Anoplolepis gracilipes* has been introduced widely, presumably as a hitchhiker on various articles. The reproductives fly. Therefore, it receives a **Medium (2)** in this category.
 - Low (1) does not have high reproductive or dispersal potential.

- **Medium (2) has either high reproductive or dispersal potential.**

- High (3) has both high reproduction and dispersal potential.

- 4) **Economic Impact.** This ant tends plant-feeding insects. If it became established in California, it could lead to increased impacts from certain plant pests or make it more difficult to control such pests. This ant is reported to injure and kill vertebrates (birds), so it is possible that it may injure agriculturally-important animals that are in infested areas. It has also been considered a biological control agent, so it is possible that it could help control certain pests in the state as well. Therefore, it receives a **High (3)** in this category.

Economic Impact: A, B, C, F

A. The pest could lower crop yield.

B. The pest could lower crop value (includes increasing crop production costs).

C. The pest could trigger the loss of markets (includes quarantines).

D. The pest could negatively change normal cultural practices.

E. The pest can vector, or is vectored, by another pestiferous organism.

F. The organism is injurious or poisonous to agriculturally important animals.

G. The organism can interfere with the delivery or supply of water for agricultural uses.

Economic Impact Score: High

- Low (1) causes 0 or 1 of these impacts.

- Medium (2) causes 2 of these impacts.

- **High (3) causes 3 or more of these impacts.**

- 5) **Environmental Impact.** *Anoplolepis gracilipes* is reported to injure and kill birds and there is evidence that it may have reduced the abundances of other ant species in areas it has invaded. Its supercolony behavior suggests a greater potential for impacts than with other ant species that do

not behave this way. Infestations may trigger treatments in agricultural or residential areas. Therefore, *A. gracilipes* receives a **High (3)** in this category.

Environmental Impact: A, D

A. The pest could have a significant environmental impact such as lowering biodiversity, disrupting natural communities, or changing ecosystem processes.

B. The pest could directly affect threatened or endangered species.

C. The pest could impact threatened or endangered species by disrupting critical habitats.

D. The pest could trigger additional official or private treatment programs.

E. The pest significantly impacts cultural practices, home/urban gardening or ornamental plantings.

Environmental Impact Score: High (3)

- Low (1) causes none of the above to occur.
- Medium (2) causes one of the above to occur.
- **High (3) causes two or more of the above to occur.**

Consequences of Introduction to California for *Anoplolepis gracilipes*: High (13)

Add up the total score and include it here.

- Low = 5-8 points
- Medium = 9-12 points
- High = 13-15 points**

6) Post Entry Distribution and Survey Information: *Anoplolepis gracilipes* is not known to be established in California. It receives a **Not established (0)** in this category.

- Not established (0)** Pest never detected in California, or known only from incursions.

–Low (-1) Pest has a localized distribution in California, or is established in one suitable climate/host area (region)..

–Medium (-2) Pest is widespread in California but not fully established in the endangered area, or pest established in two contiguous suitable climate/host areas.

–High (-3) Pest has fully established in the endangered area, or pest is reported in more than two contiguous or non-contiguous suitable climate/host areas.

Final Score:

7) The final score is the consequences of introduction score minus the post entry distribution and survey information score: High (13)

Uncertainty:

Anoplolepis gracilipes may be established in California. This ant has been introduced widely across the world, and yet it is mostly limited to tropical areas. This suggests that California may not be suitable for the species, although irrigated agricultural and residential areas appear to provide more suitable conditions for it.

Conclusion and Rating Justification:

Although it may be unlikely to establish over more than a small portion of the state, *Anoplolepis gracilipes* is an ant that is generally considered invasive and poses a threat to agriculture and the environment in California. It is not known to be present here. For these reasons, an “A” rating is justified.

References:

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Responsible Party:

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***Comment Period: 01/30/2023 – 03/16/2023**

***NOTE:**

You must be registered and logged in to post a comment. If you have registered and have not received the registration confirmation, please contact us at [permits\[@\]cdfa.ca.gov](mailto:permits[@]cdfa.ca.gov).

Comment Format:

- ❖ Comments should refer to the appropriate California Pest Rating Proposal Form subsection(s) being commented on, as shown below.

Example Comment:

Consequences of Introduction: 1. Climate/Host Interaction: [Your comment that relates to “Climate/Host Interaction” here.]

- ❖ Posted comments will not be able to be viewed immediately.

- ❖ Comments may not be posted if they:

Contain inappropriate language which is not germane to the pest rating proposal;

Contains defamatory, false, inaccurate, abusive, obscene, pornographic, sexually oriented, threatening, racially offensive, discriminatory or illegal material;

Violates agency regulations prohibiting sexual harassment or other forms of discrimination;

Violates agency regulations prohibiting workplace violence, including threats.

- ❖ Comments may be edited prior to posting to ensure they are entirely germane.

- ❖ Posted comments shall be those which have been approved in content and posted to the website to be viewed, not just submitted.

Proposed Pest Rating: A